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TITLE: On the new silico-niobium molybdenum complex

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TEXT: The presence of a new compound, formed by a reaction between niobate and silicomolybdenic acid in acid medium, was determined at the Institut obshchey i neorganicheskoy khimii AN USSR (Institute of General and Inorganic Chemistry AS UkrSSR). Several facts proving the individuality of the observed silico-niobium molybdenum complex (SNMC) are presented in this paper. The most specific property of the new complex shows the effect of nitric acid on the extraction of the heteropolycomplexes - the new complex, the corresponding phosphorniobium-molybdenum, and silicomolybdenum complexes - by iso-amyl alcohol. The results of corresponding experiments demonstrate that SNMC is extracted less into the organic phase than the silicomolybdenum complex and considerably less than its analog, i.e. the phosphorniobium molybdenum complex. Besides an identification in this manner, the complex could thus be separated from these heteropolycomplexes.

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On the new silico-niobium molybdenum complex

Another characteristic of SNMC is the slow development of its yellow colour at pH 4 - 5, accelerated by boiling, while binary silicomolybdenic acid is quickly formed already at room temperature. A solution of silicate and molybdate at a ratio $[Si] = (1/24)[Mo] = 1 \cdot 10^{-2}$ M in absence and presence of niobate $[Nb] = 1 \cdot 10^{-2}$ M was acidified with different quantities of nitric acid and boiled. In the presence of niobium the yellow colour of SNMC developed already at pH = 6.5, while formation of the binary silicomolybdenic acid occurs only at pH = 5.5. The analogous phosphorus complexes are formed at a much higher pH. There is 1 figure.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR (Institute of General and Inorganic Chemistry AS UkrSSR)

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